

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2004/001780

A. CLASSIFICATION OF SUBJECT MATTER
IPC7 B22D-11/06; B22D-9/00; B22D-7/06

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B22D-11/06; B22D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base, and, where practicable, search terms used)
Canadian Patent Database; Delphion

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 1364717 May 19, 1964 Companie Generale du Duralumin et du Cuivre (whole document and Figures)	1, 9-11, 13, 14, 22-25, 27, 28, 36
X	US 4934443 Jun. 19, 1990 Honeycutt (col. 3 and 4)	5-7, 18-20, 32-34
Y	US 4250950 Feb. 17, 1981 Buxmann (whole document)	
X	US 5515908 May 14, 1996 Harrington (col. 2; col. 7, lines 51 to 53)	
Y	US 6135199 Oct. 24, 2000 Wyatt-Mair (col. 4, lines 46-49)	

Further documents are listed in the continuation of Box C. [x]

Patent family members are listed in annex. [x]

* Special categories of cited documents :	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance		
"E" earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family

Date of the actual completion of the international-type search
24 December 2004 (24-12-2004)

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23 February 2005 (23-02-2005)

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Commissioner of Patents
Canadian Patent Office - PCT
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6063215 May 16, 2000 Harrington (claims 13, 23; Figure 3)	
Y	US 4061177 Dec. 6, 1977 Silvelotti	
Y	US 4061178 Dec. 6, 1977 Silvelotti (Figure 1)	
Y	US 5636681 Jun. 10, 1977 Sulzer (Figure 1)	12, 26
Y	JP 63132751 (abstract) June 4, 1998 Nakada Masayuki	8, 21 35

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CA2004/001780

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
FR1364717	26-06-1964	FR1364717 A	26-06-1964
US4934443	19-06-1990	AT100743T T CA1325097 C DE3887518D D1 DE3887518T T2 EP0362305 A1 JP2503170T T US4934443 A WO8907498 A1	15-02-1994 14-12-1993 10-03-1994 23-06-1994 11-04-1990 04-10-1990 19-06-1990 24-08-1989
US4250950	17-02-1981	AU527675 B2 AU5212179 A BE879721 A1 CA1143922 A1 CH633206 A5 DE2856472 A1 ES485112 A1 FR2440236 A1 GB2034217 A IN151740 A1 IT1125524 B JP1001227B B NL7907798 A NO793517 A SE441420 B SE7909073 A US4250950 A ZA7905516 A	17-03-1983 15-05-1980 15-02-1980 05-04-1983 30-11-1982 14-05-1980 16-05-1980 30-05-1980 04-06-1980 16-07-1983 14-05-1986 10-01-1989 07-05-1980 06-05-1980 07-10-1985 04-05-1980 17-02-1981 26-11-1980
US5515908	14-05-1996	AT178514T T AU671638 B2 AU692236 B2 AU1860495 A BR9408373 A CA2096365 A1 CA2178587 A1 CN1051732B B DE69324313D D1 DE69426362D D1 DE69426362T T2 DK735931T T3 EP0583867 A1 EP0735931 A1 ES2151953T T3 JP3260487B2 B2 JP3497170B2 B2 JP9507793T T MX9303383 A1 US5515908 A US5564491 A US6102102 A WO9517274 A1	15-04-1999 05-09-1996 04-06-1998 10-07-1995 19-08-1997 24-12-1993 29-06-1995 26-04-2000 12-05-1999 04-01-2001 05-04-2001 22-01-2001 23-02-1994 09-10-1996 16-01-2001 25-02-2002 16-02-2004 12-08-1997 31-01-1994 14-05-1996 15-10-1996 15-08-2000 29-06-1995
US6135199	24-10-2000	AT231756T T AU733123 B2 AU1465999 A BR9814215 A CA2309917 A1 CN1279629T T DE69811112D D1 DE69811112T T2 EP1034058 A1 ES2191981T T3 JP3343110B2 B2 PT1034058T T US6135199 A WO9926744 A1	15-02-2003 10-05-2001 15-06-1999 03-10-2000 03-06-1999 10-01-2001 06-03-2003 20-11-2003 13-09-2000 16-09-2003 11-11-2002 30-06-2003 24-10-2000 03-06-1999
US6063215	16-05-2000	AT217822T T AU7437196 A BR9611066 A CA2234945 A1 CN1081100B B DE69621351D D1 DE69621351T T2 EP0874703 A1 US6063215 A WO9714520 A1	15-06-2002 07-05-1997 13-07-1999 24-04-1997 20-03-2002 27-06-2002 09-01-2003 04-11-1998 16-05-2000 24-04-1997

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA2004/001780

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US4061177	AT276076 A	AT357708B B AU502200 B2 AU1300076 A BE840795 A1 BR7602347 A CA1091889 A1 CA1093272 A1 CH614142 A5 DE2616463 A1 DK144724B B ES447048 A1 FR2307599 A1 GB1549241 A IT1059139 B IT1059140 B JP988287C C NL169694B B NO146849B B NZ180524 A SE415737 B SE7604371 A SU1114324 A3 US4061177 A US4061178 A US4190103 A ZA7601991 A	15-12-1979 25-07-1980 19-07-1979 20-10-1977 02-08-1976 05-10-1976 23-12-1980 13-01-1981 15-11-1979 28-10-1976 24-05-1982 01-06-1977 12-11-1976 01-08-1979 31-05-1982 31-05-1982 26-02-1980 16-03-1982 13-09-1982 18-12-1978 27-10-1980 16-10-1976 15-09-1984 06-12-1977 06-12-1977 26-02-1980 30-03-1977
US4061178	AT276076 A	AT357708B B AU502200 B2 AU1300076 A BE840795 A1 BR7602347 A CA1091889 A1 CA1093272 A1 CH614142 A5 DE2616463 A1 DK144724B B ES447048 A1 FR2307599 A1 GB1549241 A IT1059139 B IT1059140 B JP988287C C NL169694B B NO146849B B NZ180524 A SE415737 B SE7604371 A SU1114324 A3 US4061177 A US4061178 A US4190103 A ZA7601991 A	15-12-1979 25-07-1980 19-07-1979 20-10-1977 02-08-1976 05-10-1976 23-12-1980 13-01-1981 15-11-1979 28-10-1976 24-05-1982 01-06-1977 12-11-1976 01-08-1979 31-05-1982 31-05-1982 26-02-1980 16-03-1982 13-09-1982 18-12-1978 27-10-1980 16-10-1976 15-09-1984 06-12-1977 06-12-1977 26-02-1980 30-03-1977
US5636681	10-06-1997	AU688111 B2 AU706227 B2 AU3337295 A AU4609797 A BR9508305 A CA2128398 A1 CN1054791B B DE69525628D D1 DE69525628T T2	05-03-1998 10-06-1999 16-02-1996 12-02-1998 25-11-1997 20-01-1996 26-07-2000 04-04-2002 05-09-2002

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA2004/001780

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		DE69530235D D1	08-05-2003
		DE69530235T T2	29-01-2004
		EP0773845 A1	21-05-1997
		EP0908255 A1	14-04-1999
		ES2169145T T3	01-07-2002
		ES2191246T T3	01-09-2003
		JP10502578T T	10-03-1998
		NO970137 A	05-03-1997
		US5636681 A	10-06-1997
		US5671800 A	30-09-1997
		WO9602339 A1	01-02-1996
JP63132751	04-06-1988	JP63132751 A	04-06-1988